

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments and the following remarks.

The amendments to the claims are as follows. Independent method claim 1 and independent device claim 5 have each been amended in order to recite that the "at least two drawing devices" are each a "caterpillar traction device."

Also in each of claims 1, 2, 3, and 4, the language "characterized in that" has been changed to "comprising." In each of claims 5, 6, and 7, the language "characterized in that" has been changed to "wherein."

Claim 3 has been amended in order to cancel the alternative embodiments relating to temperature of "above 80°C" or "preferably above 100°C." These embodiments have been readded to the claims as new claims 8 and 9, respectively.

Amendments to claims 1 and 5 are to recite that "caterpillar traction devices" are being used as the "at least two drawing devices" of the present invention. Support for this is found on page 5 in lines 16 to 19, on page 6 in line 7, on page 14 in lines 21 to 28, on page 17 in lines 11 and 16, and on page 18 in lines 9 and 13 of the present Specification. Thus, no new matter has been introduced by this Amendment.

The Applicant comments upon the prior art rejections of the claims as follows.

The present invention is directed to a method for processing drawn material (110; 210; 310; 410), especially rod-shaped or tube-shaped metal drawn material, comprising drawing the drawn material through a plurality of drawing dies (105, 106; 205, 206; 305, 306; 405, 406) by means of a multi-stage drawing unit (101; 201; 301,; 401) and the multi-stage drawing unit comprises at least two drawing devices (103, 104; 215, 216; 303, 316; 415, 404) each of which comprises a caterpillar traction device and each arranged after one of two drawing dies, which each introduce a principal drawing force into the drawn material in order to draw this respectively through the drawing die mounted before the respective drawing device, continuously supplying the drawn material to a final production stage (102; 202; 302; 402) after leaving the multi-stage drawing unit.

The present invention is also directed to a drawn material production installation comprising a multi-stage drawing unit (101; 201; 301,; 401) in which the multi-stage drawing unit comprises at least two drawing devices (103, 104; 215, 216; 309, 316; 415, 404) each of which comprises a caterpillar traction device and each arranged after a drawing die and comprising a final production stage (102), and wherein an outlet (108; 208; 308; 408) of the drawing unit is arranged with respect to an

inlet (109; 209; 309; 409) of the final production stage such that drawn material passes directly from the drawing unit outlet to the final production stage inlet.

On Page 2 of the Office Action, the Patent Examiner has rejected claims 1, 5 and 6 under 35 U.S.C. 102(b) as being anticipated by *Bletso* (U.S. Patent No. 2,348,595).

Also on Page 2 of the Office Action, the Patent Examiner has rejected claims 2 and 3 under 35 U.S.C. 103(a) as being unpatentable over *Bletso* (U.S. Patent No. 2,348,595) in view of *Smart* (U.S. Patent No. 2,702,937).

On Page 3 of the Office Action, the Patent Examiner has rejected claims 1 and 4-7 under 35 U.S.C. 103(a) as being unpatentable over *Johnson* (U.S. Patent No. 1,474,778) or *Johnson* (U.S. Patent No. 1,338,453), either one further in view of *Whittaker* (U.S. Patent No. 2,138,201).

Bletso (U.S. Patent No. 2,348,595) on page 1 in the left hand column, in lines 1 to 4, discloses a winding mechanism peculiarly well suited for accumulating the wire drawn from a multiple draft wire-drawing machine.

Bletso on page 1 in the right hand column, in lines 23 to 46, further discloses a main drive motor 24 mounted on a suitable base secured to the frame 10 of the machine which has an armature shaft to which is secured a pulley 26 which is connected by a belt 28 with a pulley 30 secured to a shaft 32 which carries one

element of a clutch indicated generally at 34. A clutch-operating member 36 controls transmission of motion to a shaft section 38 aligned with the shaft 32. The shaft section 38 has keyed or otherwise secured thereto the stepped wire draw-off capstan above referred to. The shafts 38 and 32 are suitably mounted in bearings 40-42, as shown.

Also in *Bletso*, as the last stretch of wire, indicated at W in Figure 1, leaves the capstan 12, it passes through a finishing die 44 mounted on a die-holder secured to the frame 10, and thence around a fixed guide sheave 46 which directs it centrally to a passageway 48 extending axially of a rotating spindle 50 supported by ball or other suitable antifriction bearings 52-54 carried in housings 56 and 58. The spindle 50 has a pulley 60 secured thereto which is driven by a belt 62 trained around a pulley 64 secured to the above mentioned shaft 38. Thus the spindle is driven in synchronism with the draw-off capstan 14.

Thus, *Bletso* fails to teach or to suggest caterpillar traction devices being used as the at least two drawing devices of the claimed invention.

Smart (U.S. Patent No. 2,702,937) in column 1, in lines 15 to 16 discloses a method and a machine for continuously forming and processing multi-length rod.

Also, *Smart* from column 3, line 80 to column 4, line 1 discloses a cut-off 13 comprising a rotating drum 60 having

axially movable knives 61 mounted in the circumferential edge thereof. The rotating drum 60 is bearingly supported on the structure of the straightening device 12 and is rotated by a drive shaft 62 geared thereto and drive by the main motor 38.

Thus, *Smart* fails to teach or to suggest caterpillar traction devices being used as the at least two drawing devices of the claimed invention.

Johnson (U.S. Patent No. 1,474,778) on page 1, in lines 11 to 14 discloses a method of and an apparatus for reducing and straightening very fine wire and then coiling it on a block.

Also, *Johnson* on page 1 in lines 43 to 52 discloses a draw-head of an ordinary continuous wire drawing machine, the last die holder 11 and the rotary carrier 12 to which the wire is taken from the die, and which pulls it through it. These parts, as well as the ordinary winding block 15 are operated in any desired way, as for example, by shaft 18, connected gearing, and a belt on a pair of pulleys 16 and 17.

Thus, *Johnson* fails to teach or to suggest caterpillar traction devices being used as the at least two drawing devices of the claimed invention.

Johnson (U.S. Patent No. 1,338,453) on page 1, in lines 9 to 11, discloses an apparatus for drawing and straightening very fine wire.

Also, *Johnson* on page 1, in lines 41 to 49, discloses that carrier 12 and the block 15 in accordance with this invention must be geared up in such a manner as to give them the same surface velocity substantially. This is done by properly proportioning the pulleys 16 and 17 which receive power from the driving shaft 18. This drive shaft 18 drives the carrier 12 through bevel gears or other gearing as may be desired.

Thus, *Johnson* fails to teach or to suggest caterpillar traction devices being used as the at least two drawing devices of the present invention.

Whittaker (U.S. Patent No. 2,138,201) on page 1 in the left hand column, in lines 1 to 4 discloses a method and an apparatus for drawing wire, particularly for drawing wire through a succession of dies to decrease its diameter.

Also, *Whittaker* on page 1 in the right hand column in lines 12 to 47 discloses in the apparatus shown in Fig. 2 the wire is drawn first through a die 21, then about a pulley 22 having a vertical plane of rotation. Then it passes successively through a die 23 and about a pulley 24 in a horizontal plane, thence through a die 25 about a pulley 26 in a vertical plane, through a die 27 to a pulley 28 in a vertical plane, thence successively through a die 29 about horizontal pulley 30, through die 31 and about a horizontal pulley 32. Then it passes through a die 33 about a vertical pulley 34, through die 35 and about a vertical

pulley 36 to a final winding drum 37. Hence, the wire passes about five vertical pulleys and three horizontal pulleys, this distribution being one of convenience. It is believed that the pulley 22 could be a horizontal pulley in the same plane as the pulley 24. There being eight pulleys in all, these pulleys may be arranged in the form of a parallelopiped instead of in a straight line, thereby greatly economizing in the space required for the wire drawing apparatus.

In *Whittaker*, in the apparatus shown in Fig. 3, the wire 10 is drawn through a succession of dies 41 by means of a succession of driving pulleys 42 arranged between the successive dies. The driving drums 42 may all be arranged in a single plane as, for example, in a vertical plane. To obtain a flexing of the wire about other planes, groups of idler pulleys 43 are interspersed in the system, the idler pulleys of some groups being arranged in horizontal planes, and those of other groups in vertical planes. Each group of idler pulleys is made up of three individual pulleys 44, 45 and 46. The wire is finally wrapped onto a winding drum 47.

Thus, *Whittaker* fails to teach or to suggest caterpillar traction devices being used as the at least two drawing devices of the present invention.

For all the reasons set forth above, none of the prior art references provide an identical disclosure of the claimed invention. Hence, the present invention is not anticipated under 35 U.S.C. 102. Withdrawal of this ground of rejection is respectfully requested.


The advantages with respect to "caterpillar traction devices" are a vast improvement over the problems of any other drawing devices since "caterpillar traction devices" combine very high drawing forces together with very high drawing speeds without bending the material that is drawn.

Thus, the present invention is not anticipated under 35 U.S.C. 102 but is patentable under 35 U.S.C. 103. Withdrawal of this ground of rejection is respectfully requested.

A prompt notification of allowability is respectfully requested.

Respectfully submitted,
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Enclosure: Copy of Petition for One Month Extension of Time

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 25, 2006.


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